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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,471	03/08/2001	Atsuo Teraoka	Q63505	4917

7590 03/04/2003
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

KUHNS, ALLAN R

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 03/04/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,471

Applicant(s)

TERAOKA ET AL.

Examiner

KUHNS

Group Art Unit

1732

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE(3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on FEB. 21, 2003

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-16 is/are pending in the application.

Of the above claim(s) 1-2 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 3-16 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____

☐ Copies of the certified copies of the priority documents have been received
in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☒ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

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1. Applicant's election without traverse of Group ii, claims 3-16 in Paper No. 6 is acknowledged.
2. Claims 1-2 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 6.
3. Claims 10-16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not describe the manner in which the screw and screw cylinder are metalized such that undue experimentation would be required of one of ordinary skill in the art.
4. Claims 3-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims are confusing, with regard to determining their metes and bounds, because it is unclear precisely what is meant by "directions of plasticization and injection". In particular, it is unclear as to whether these represent separate directions or whether substantially the same direction is intended. Clarification is required.
5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

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art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3- 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of

Fujita et al. Xu discloses the basic claimed method for forming a thermoplastic resin foam including (1) plasticizing a thermoplastic resin material by rotatably driving a screw provided drivably in directions of plasticization and injection inside a screw cylinder, and (2) injecting melted resin, permeated by an inert gas, into a mold by driving the screw in the direction of injection after having injected the inert gas (carbon dioxide), having a pressure of at least equal to the supercritical pressure of the inert gas to allow the gas to permeate the melted mix. Xu appears not to teach the aspect of using a servomotor to drive the screw, but such is taught by Fujita et al. at column 2, lines 61-65. It would have been obvious to one of ordinary skill in the art to incorporate the use of this feature taught by Fujita et al. into the method of Xu in order to better control the movement of the screw.

Fujita et al. teach the use of a brake, as in claim 4, and Xu teaches or suggests the driving of a screw in the manner of claims 5-6, and the screw movements of claims 7-8. It is submitted that at least some vibration, as in claim 9, is inherent in the use of the apparatus of Xu.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Kuhns whose telephone number is (703) 308-3462. The examiner can normally be reached on Monday to Thursday from 7:00 to 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino, can be reached on (703) 308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Allan R. Kuhns
ALLAN R. KUHNS
PRIMARY EXAMINER AU 1732
3-3-03